REMARKS/ARGUMENTS

I. General

Claims 1-37 are pending in the present application. Claims 1-5 and 32-33 stand rejected under 35 U.S.C. § 102(b). Claims 6, 9, 12, 17-19, 21, and 26 stand rejected under 35 U.S.C. § 102(e). Claims 7, 8, 10, 11, 13-15, 20, 22-24, 28-31, and 34-37 stand rejected under 35 U.S.C. § 103(a). Applicant respectfully traverses the rejections of record.

The specification stands objected to because the title of the invention is asserted by the Examiner not to be descriptive of the invention to which the claims are directed. In response, Applicant has amended the title of the invention to recite a Tuner System Adaptive to Signal Characteristics, consistent with the subject matter of pending claims. Accordingly, it is respectfully submitted that the objection to the specification has been overcome.

II. The Rejections of Record Do Not Specifically Address All Claims

Claims 16, 25, and 27, although indicated as rejected in the Office Action Summary, are not specifically addressed within the body of the Office Action. Accordingly, Applicant respectfully points out that the rejection of claims 16, 25, and 27 does not comport with Office policy. Specifically, the Examiner is directed that "[i]n accordance with the patent statute, 'Whenever, on examination, any claim for a patent is rejected , or any objection . . . made', notification of the reasons for rejection and/or objection together with such information and references as may be useful in judging the propriety of continuing the prosecution (35 U.S.C. 132) should be given," M.P.E.P. § 707. As such the Examiner has not "clearly articulate[d] any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise respond completely at the earliest opportunity," M.P.E.P. §706. Applicant therefore requests that the Examiner set forth the grounds for rejection with respect to claims 16, 25, and 27 in order that Applicant may have a full and fair opportunity to explore the patentability of these claims.

III. The 35 U.S.C. § 102 Rejections

Claims 1-5 and 32-33 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Carney, U.S. patent number 5,590,156 (hereinafter *Carney*). Claims 6, 9, 12, 17-19, 21, and 26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kobayashi, U.S. patent number 6,243,570 (hereinafter *Kobayashi*).

To anticipate a claim under 35 U.S.C. § 102, a reference must teach every element of the claim, see M.P.E.P. § 2131. Moreover, in order for a prior art reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim," see M.P.E.P. § 2131, citing *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989). However, the applied references neither teach every element of the claims nor show the identical invention in as complete of detail as recited in the claims.

A. The 35 U.S.C. § 102(b) Rejections

The 35 U.S.C. § 102(b) rejections of record are based upon the disclosure of *Carney* which teaches a system in which a plurality of digital tuners are provided in a multichannel basestation, see column 4, line 66, through column 5, line 5. The gains associated with the digital tuners of *Carney* are each selected, *a priori*, to provide increased dynamic range of the overall system, see column 7, lines 49-52. Specifically, the gain of a first digital tuner is set to service channels having the largest expected received signal strength indication, the gain of the second digital tuner is set to service channels having a lower expected received signal strength indication, and so on, see column 7, lines 52-57. Thereafter, as a signal associated with a user is received, its received signal strength indication is measured and a specific channel is assigned which corresponds to a particular digital tuner providing a gain preconfigured to accommodate the received signal strength indication, column 7, line 62, through column 8, line 6. As the user's received signal strength indication changes, the user is assigned another channel corresponding to a digital tuner providing a different gain preconfigured to accommodate that received signal strength indication, column 8, lines 59-64.

Independent claim 1 recites "means . . . for changing the operating characteristics of said tuner." As recited in the claim, the changing of the operating characteristics of the tuner is under control of a means for determining desirable tuner operating characteristics from measurable characteristics which are present in a particular set of signals.

Accordingly, in contrast to the means for changing the operating characteristics of the tuner recited in claim 1, *Carney* merely assigns a channel to a user based upon the received signal strength of a signal received from the user, where the particular channel assigned corresponds to a digital tuner providing a gain suitable for use with the received signal strength.

It appears that the Examiner is reading the assigning of a particular channel corresponding to a digital tuner, and thus the receiving of the assigned channel by the digital tuner, to be "changing the operating characteristics of said tuner." However, this simply is not a fair reading of the disclosure of *Carney*. The digital tuners of *Carney* provide constant operational characteristics irrespective of whether a user is assigned a channel associated therewith, see e.g., column 5, lines 50-54. Accordingly, it is respectfully asserted that claim 1 as well as the claims dependent therefrom are not anticipated by *Carney*.

The above identified differences between *Carney* and the present claims become even more obvious in light of the limitations of the dependent claims. For example, claim 2 recites that the means for changing operating characteristics includes means for changing power consumption levels of components of the tuner. It is respectfully asserted that the assigning of a channel to a user which corresponds to a particular tuner does not change the power consumption levels of components of that tuner as recited in the claim. Indeed, the Examiner appears to recognize this deficiency and, therefore, separately asserts that *Carney* discloses means for changing power levels with respect certain tuner components, relying upon Figure 5 of *Carney* for support. However, Figure 5 merely shows a flow diagram in which the received signal strength indication of a user's signal is periodically re-determined and, if appropriate, a different channel is assigned to the user based upon the re-determination, see Figure 5 and column 8, lines 40-64. This disclosure does not teach or suggest changing power consumption levels of components of a tuner what-so-ever, much less means for

changing the operating characteristics of the tuner including means for changing power levels with respect to tuner components.

Claim 3 recites that the means for changing operating characteristics includes means for determining optimum operating characteristics for the tuner depending upon the determined operating characteristics present in a particular set of signals. Again the Examiner relies solely upon the disclosure of Figure 5 of *Carney* to meet this claim. Applicant's attorney's review of Figure 5 does not reveal any determination of optimum operating characteristics for a tuner, whether depending upon the determined operating characteristics present in a particular set of signals or independent thereof. Certainly, it cannot be said that the disclosure provided in Figure 5 of *Carney* shows the identical invention in as complete of detail as recited in the claims.

Claim 4, similar to claim 2 discussed above, recites that the means for changing operating characteristics includes means for changing power levels of components of the tuner, wherein the power levels are changed to the determined optimum level. As discussed above with respect to claim 2, *Carney* simply does not teach or suggest means for changing power levels of components of a tuner as recited in the claim. Moreover, claim 4 includes the added aspect of changing power levels to a determined optimum level, further distinguishing the claim over the disclosure of *Carney*.

With respect to claim 5, the Examiner asserts that *Carney* inherently discloses the tuner is constructed on a single substrate. In order to properly establish a rejection based on inherency, "the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art," M.P.E.P. § 2112, citing *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis original). Accordingly, a reference may not be anticipating under the principle of inherency on the basis of possibilities or probabilities, as anticipation by inherency requires that persons skilled in the art would recognize that the missing material is "necessarily present" in the reference, see *In re Robertson*, 49 U.S.P.Q.2d 1949 (Fed. Cir. 1999). There is nothing in the disclosure of *Carney* which would lead one of skill in the art to recognize that the components of a tuner of

Carney are necessarily disposed upon a single substrate, nor has the Examiner shown otherwise.

Independent claim 32, rejected as anticipated by *Carney* for the same reasons as claim 1 discussed above, specifically recites that adjustment circuitry is operable to change power levels to certain tuner components in accordance with a determination as to which signal set is then being processed. Initially, it is pointed out that *Carney* does not teach or suggest determination circuitry for selecting which signal set is being processed at a point in time, nor has the Examiner asserted otherwise. Instead, the Examiner asserts that "*Carney* discloses a tuner (1) for extracting specific signals from a set of signals on a carrier . . . ." However, this disclosure of *Carney* does not select which signal set is being processed, but rather a tuner of *Carney* processes a particular signal associated therewith.

Additionally, *Carney* does not teach or suggest the changing of power levels to tuner components in accordance with the signal set then being processed, much less changing the power levels in cooperation with determining circuitry for selecting which signal set is being processed. Instead, *Carney* teaches assignment of a channel based upon a received signal strength indication, as discussed above with respect to claim 2. Accordingly, it is respectfully asserted that claim 32 and the claims dependent therefrom are not anticipated by the disclosure of *Carney*.

Moreover, claim 33 recites that the adjustment circuitry of claim 32 is operable in cooperation with the determination circuitry for changing the component mix of the tuner. The Examiner has not identified any aspect of *Carney* meeting this claim.

B. The 35 U.S.C. § 102(e) Rejections

The 35 U.S.C. § 102(e) rejections of record are based upon the disclosure of *Kobayashi*. *Kobayashi* teaches an RF tuning circuit in which the tuning frequency is adjusted based upon a detected temperature, see column 2, lines 22-29.

Independent claim 6 as originally submitted recited "assessing from time to time the environment of the signals being processed by said tuner . . . ." In rejecting this aspect of the claim, the Examiner relies upon Figure 5 of *Kobayashi* wherein temperature determinations

are made. Accordingly, it appears that the Examiner is reading the recited "environment of the signals" to encompass the ambient environment of the system of *Kobayashi*.

When read in light of the present specification, it is believed that it is clear that the recited "environment of the signals" does not encompass the system environment. For example, at page 2, lines 6-11, a discussion is provided with respect to the tuner's linearity requirements being driven by characteristics of the incoming signal environment, such that a dense signal environment with large variation in individual signal strength requires a very linear receiver and a signal environment with few signals and constant individual signal strengths require less linearity.

Consistent with the above, Applicant has amended claim 6 to recite "assessing from time to time the incoming signal environment, wherein an assessment of said incoming signal environment is a function of signals being processed by said tuner . . . ." The claim amendment has not been made to narrow the scope of the claim in the face of prior art, but rather in an effort to further clarify the above identified claim language by more closely tracking the language of the specification. No new matter has been added.

It is respectfully asserted that the temperature monitoring and frequency adjustment of *Kobayashi* does not meet the language of the claim. Specifically, *Kobayashi* does not teach or suggest an assessment of an incoming signal environment which is a function of signals being processed by the tuner and selecting an operating level for the tuner based upon the assessed incoming signal environment. Accordingly, it is respectfully asserted that claim 6 and the claims dependent therefrom are not anticipated by the disclosure of *Kobayashi*.

Independent claim 9 recites "determining optimal tuner operating characteristics from knowledge of the signals being processed by the tuner . . . ." Similarly, independent claim 18 recites "determining tuner operating characteristics from knowledge of the signals being processed by the tuner . . . ." Independent claim 26 recites "determining desired operating characteristics of certain tuner components from knowledge of the signals being processed by the tuner . . . ."

In rejecting the above identified aspects of claims 9, 18, and 26, the Examiner asserts that "*Kobayashi* discloses determining optimal tuner operating characteristics from

knowledge (base on temperature) of the signals being processed by the tuner," relying upon the disclosure of Figure 5 of *Kobayashi* for support. As conceded by the Examiner, the knowledge from which operating characteristics are determined according to *Kobayashi* is temperature. The temperature knowledge of *Kobayashi* is the ambient temperature of the radio receiver, see column 3, lines 33-34.

Although the language of the claims is broad in the sense that it can be read upon a variety of knowledge, the knowledge of the claim language is clearly limited to knowledge of the signals being processed by the tuner. Knowledge with respect to a signal might include information with respect to a current channel signal level or total signal power level, see the present specification at page 3, lines 19-18, or even frequency, modulation, or amplitude. However, it cannot fairly be said that the temperature of a radio receiver is knowledge of the signals being processed by the tuner. Accordingly, Applicant respectfully asserts that independent claims 9, 18, and 26, as well as the claims dependent therefrom, are not anticipated by the disclosure of *Kobayashi*.

The above identified differences between *Kobayashi* and the present claims become even more obvious in light of the limitations of the dependent claims. For example, claim 19 recites that the determining circuit includes a circuit for taking signal measurements of the signal being processed by the tuner. The circuitry of *Kobayashi* operable with the temperature measurement described therein does not take signal measurements of the signal being processed by the tuner, see e.g., column 3, lines 16-38.

Dependent claim 17 includes the limitations of claim 14, from which it depends, reciting adjusting power consumption of certain components with the tuner. In the 35 U.S.C. § 103 rejection of record with respect to claim 14 the Examiner concedes that *Kobayashi* does not teach this aspect of the claims. 35 U.S.C. § 112, fourth paragraph, states that "[a] claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." Accordingly, if the limitations of claim 14 are not present in the disclosure of *Kobayashi*, it follows *a fortiori* that claim 17, dependent therefrom and reciting further limitations, is also not met by the disclosure of *Kobayashi*.

Moreover, claim 17 recites adjusting the number of components that are active at any particular time. Although claim 17 stands rejected over *Kobayashi*, the Examiner has provided no specific guidance as to what within *Kobayashi* the Examiner is reading to meet this aspect of the claims. Applicant's attorney's review of *Kobayashi* has failed to identify any disclosure sufficient to meet this aspect of the claims.

IV. The 35 U.S.C. § 103 Rejections

Claims 7, 8, 10, 11, 13-15, 20, 22-24, and 28-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kobayashi* in view of Grandfield et al., U.S. patent number 5,564,092 (hereinafter *Grandfield*). Claim 31 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kobayashi* in view of Wheeless, U.S. patent number 5,023,934 (hereinafter *Wheeless*). Claims 34-37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Carney* in view of *Wheeless*.

To establish a *prima facie* case of obviousness, three basic criteria must be met, see M.P.E.P. § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Without conceding the second criteria, Applicant respectfully asserts that the references lack proper motivation to combine in addition to lacking all the claim limitations.

It is initially pointed out that, as shown above with respect to the 35 U.S.C. § 102 rejections of record, *Kobayashi* does not meet all elements of independent claims 6, 9, 18, and 26 from which claims 7, 8, 10, 11, 13-15, 20, 22-24, and 28-31 depend. Similarly, as shown above with respect to the 35 U.S.C. § 102 rejections of record, *Carney* does not meet all elements of independent claim 32 from which claims 34-37 depend. Moreover, the disclosures of *Grandfield* and *Wheeless* do not cure the deficiencies in the disclosures of *Kobayashi* and *Carney*. Therefore, the proffered combinations do not establish a *prima facie* case of obviousness with respect to dependent claims 7, 8, 10, 11, 13-15, 20, 22-24, 28-31 and 34-37.

In rejecting claims 7, 8, 10, 11, and 13, the Examiner concedes that *Kobayashi* fails to teach selecting an optimum power level for the tuner. The Examiner attempts to cure the deficiency in the primary reference by introducing *Grandfield*, asserted to disclose selection of a power level. However, assuming *arguendo* that one of ordinary skill in the art would have found it obvious to do so, modification of *Kobayashi* in view of *Grandfield* would not result in the claimed invention.

For example, claim 7 recites selecting an optimum power level for the tuner and claim 8 recites selecting optimum power levels for certain components of the tuner, which would not result from the proffered combination of *Kobayashi* and *Grandfield*. *Grandfield* teaches adjusting the output power level of a radio frequency amplifier, see column 2, lines 9-24, and Figure 4. Accordingly, if *Kobayashi* were modified in view of *Grandfield* as proffered by the Examiner, the radio frequency amplifier of *Kobayashi* would have the output power level adjusted. This resulting configuration simply would not meet the claims.

The Examiner proffers the same combination of *Kobayashi* and *Grandfield* discussed above in rejecting claims 10, 11, and 13. However, claim 10 recites that determining optimal tuner operating characteristics includes taking signal measurements of the signal being processed by the tuner. Similarly, claim 13 recites that determining optimal tuner operating characteristics includes monitoring the RF input and the inband receive signal strength. It is not understood how the monitoring of a signal for adjustment of the output power level of a radio frequency amplifier of *Grandfield* in combination with the temperature adjusted radio frequency tuning circuit of *Kobayashi* can be read to meet these limitations of the claims.

Claim 11 recites that the signal measurement determines the total power across all channels. Neither the disclosure of *Kobayashi* nor the disclosure of *Grandfield* teach a determination of the total power across all channels, nor has the Examiner asserted otherwise. Accordingly, it is respectfully asserted that a *prima facie* case of obviousness has not been established with respect to this claim.

In rejecting claims 14, 15, 20, 22-24, and 28-30, the Examiner concedes that *Kobayashi* fails to disclose adjusting power consumption of certain components within the

tuner. The Examiner opines, however, that *Grandfield* discloses adjusting power level and, therefore, that the claims would have been obvious.

However, it is respectfully pointed out that none of these claims expressly recites adjusting power level. For example, claims 14, 23, 28 recite adjusting power consumption and claims 15, 24, and 29 recite controlling current levels. Even further removed from the teachings of *Grandfield* relied upon by the Examiner are claims 20, 22, and 30. Claim 20 recites a circuit for determining total power across all channels. Claim 22 recites a circuit for monitoring the RF input and the inband receive signal strength. Claim 30 recites the adjusting circuitry adds or subtracts certain components into or out of the tuner. Accordingly, even if the Examiner's statement with respect to the teachings of *Kobayashi* and *Grandfield* are accurate, the statement is not relevant to the patentability of the claims as it is the language of the claims which must be considered, see M.P.E.P. § 2143.03. Accordingly, the rejection of record with respect to claims 14, 15, 20, 22-24, and 28-30 fails to establish a *prima facie* case of obviousness under 35 U.S.C. § 103.

Moreover, claims 14, 15, 23, 24, 28, and 29 recite the respective adjusting power consumption and controlling current levels are with respect to particular components of the tuner. The proffered rejection of these claims leaves this aspect to the claim language completely unaddressed. As such, a *prima facie* case of obviousness has not been established with respect to these claims.

In rejecting claims 14, 15, 20, 22-24, and 28-30, the Examiner asserts that "it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify *Kobayashi*, in measuring power level for the tuner, in order to adjust the power level to prevent over consumption of power." It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness, M.P.E.P. § 2143.01. The language of the recited motivation is circular in nature, stating that it is obvious to make the modification because it is obvious to achieve the result. Such language is merely a statement that the reference can be modified. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination, M.P.E.P. § 2143.01, citing *In re Mills*, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Thus, the motivation provided by the

Examiner is improper, as the motivation must establish the desirability for making the modification.

With respect to claim 31, the Examiner concedes that *Kobayashi* does not disclose channel sweep circuitry and static determination circuitry operable at different times. The Examiner attempts to cure this deficiency in the disclosure of the primary reference by introducing *Wheeless*, asserted to disclose both channel sweeping and static determination circuitry. However, a review of the portion of *Wheeless* relied upon by the examiner in rejecting the claims reveals that *Wheeless* does not teach sweeping of channels, but rather a 360° azimuthal sweep of an area with a radar signal. It is respectfully asserted that this disclosure of *Wheeless* is insufficient to have led one of ordinary skill in the art to modify *Kobayashi* to meet the claims.

Similar to the rejection of claim 31 above, claims 34-37 stand rejected over a combination of art including *Wheeless*. Here, however, the Examiner concedes that the primary reference *Carney* does not disclose channel sweep circuitry and static determination circuitry operable at different times. As discussed above, it is respectfully asserted that the disclosure of *Wheeless* is insufficient to cure the identified deficiency in the primary reference. Accordingly, Applicant asserts that claims 34-37 are allowable over the rejection of record.

V. Summary

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Applicant respectfully requests that the Examiner call the below listed attorney if the Examiner believes that a discussion would be helpful in resolving any remaining problems.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Dated: December 17, 2001

Respectfully submitted,

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Version With Markings to Show Changes Made

6. (Amended) The method of operating a tuner, said method comprising the steps of:

assessing from time to time the incoming signal environment, wherein an assessment of said incoming signal environment is a function of [the] signals being processed by said tuner;

based upon said assessed incoming signal environment selecting an operating level for said tuner; and

setting the operation of said tuner consistent with said selected operating level.